Claims

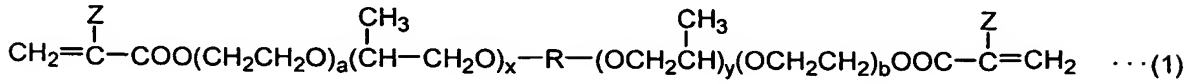
1. A modified fiber fabric obtainable by polymerizing

a component (X) which is a water-soluble eggshell membrane powder,

a component (A) which is a bifunctional monomer represented by the following formula (1),

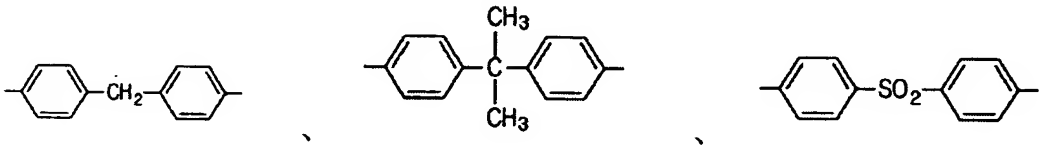
a component (B) which is a monomer containing any one of a hydroxyl group, carboxyl group, amino group, sulfonic acid group, and phosphoric acid group, and

a component (C) which is a monomer containing at least one aziridine group, or a water-soluble polymer containing a polycarbodiimide group, polyethyleneimine group, or oxazoline group, on a fiber fabric,



$$CH_2=\underset{Z}{C}-COO(CH_2CH_2O)_a(\underset{CH_3}{CH}-CH_2O)_x-R-(OCH_2\underset{CH_3}{CH})_y(OCH_2CH_2)_bOOC-\underset{Z}{C}=CH_2 \quad \cdots(1)$$

wherein R represents any one of



and $-C_nH_{2n}-$ (n is an integer of 1 to 6);

Z is a hydrogen atom or a methyl group;

a and b are integers where "a+b" is 0 to 50;

x and y are integers where "x+y" is 0 to 30; and

"a+b+x+y" is 10 or more.

2. The modified fiber fabric according to claim 1, wherein the component (X) and the components (A) to (C) are introduced into the surface and inside of the fiber.

3. The modified fiber fabric according to claim 1, wherein the component (X) and the components (A) to (C) are graft-polymerized to the fiber fabric.

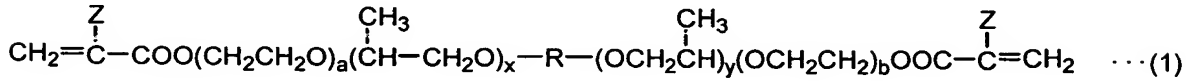
4. A fiber treating liquid comprising:

a component (X) which is a water-soluble eggshell membrane powder,

a component (A) which is a bifunctional monomer represented by the following formula (1),

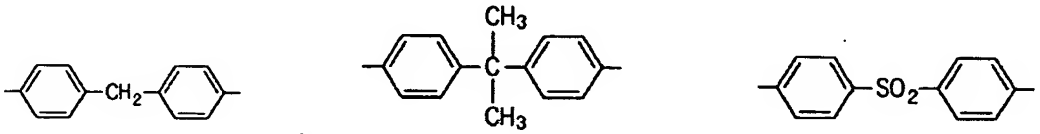
a component (B) which is a monomer containing any one of a hydroxyl group, carboxyl group, amino group, sulfonic acid group and phosphoric acid group, and

a component (C) which is a monomer containing at least one aziridine group, or a water-soluble polymer containing a polycarbodiimide group, polyethyleneimine group, or oxazoline group,



···(1)

wherein R represents any one of



and $-C_nH_{2n}-$ (n is an integer of 1 to 6);

Z is a hydrogen atom or a methyl group;

a and b are integers where "a+b" is 0 to 50;

x and y are integers where "x+y" is 0 to 30; and

"a+b+x+y" is 10 or more.

5. The fiber treating liquid according to claim 4, which contains at least one of water and an aliphatic lower alcohol with 1 to 3 carbon atoms as a solvent.

6. A method for producing a modified fiber fabric comprising the steps of:

bringing the fiber treating liquid of claim 4 into contact with a fiber fabric, and

polymerizing the component (X) and the components (A) to (C) on the fiber fabric.

7. The method according to claim 6, wherein the component (X) and the components (A) to (C) are graft-polymerized to the fiber fabric in the polymerization step.

8. A method for producing a modified fiber fabric, comprising:

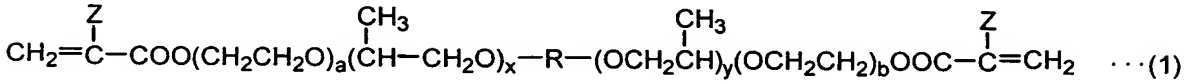
a first liquid-contacting step of bringing a fiber treating liquid comprising a component (A) which is a bifunctional monomer represented by the following formula (1), a component (B) which is a monomer containing any one

of a hydroxyl group, carboxyl group, amino group, sulfonic acid group, and phosphoric acid group, and a component (C) which is a monomer containing at least one aziridine group, or a water-soluble polymer containing a polycarbodiimide group, polyethyleneimine group, or oxazoline group, into contact with a fiber fabric,

a first polymerization step of polymerizing the components (A) to (C) on the fiber fabric,

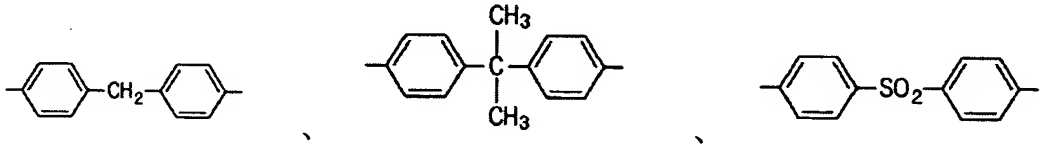
a second liquid-contacting step of bringing a solution of a component (X) which is a water-soluble eggshell membrane powder into the fiber fabric on which the components (A) to (C) are polymerized, and

a second polymerization step of polymerizing the component (X) on the fiber fabric,



···(1)

wherein R represents any one of



and $-C_nH_{2n}-$ (n is an integer of 1 to 6);

Z is a hydrogen atom or a methyl group;

a and b are integers where "a+b" is 0 to 50;

x and y are integers where "x+y" is 0 to 30; and

"a+b+x+y" is 10 or more.

9. The method according to claim 8, wherein the fiber treating agent and the solution of the component (X) comprise at least one of water and a lower aliphatic alcohol with 1 to 3 carbon atoms as a solvent.

10. The method according to claim 8, wherein the components (A) to (C) are graft-polymerized to the fiber fabric in the first polymerization step, and the component (X) is graft-polymerized to the fiber fabric in the second polymerization step.